

Interactive comment on “A Nonparametric Statistical Technique for Combining Global Precipitation Datasets: Development and Hydrological Evaluation over the Iberian Peninsula” by Md Abul Ehsan Bhuiyan et al.

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Short Comments

I quickly read the paper by Md Abul Ehsan Bhuiyan et al. as I am very interested to the proposed methodology. Indeed, as the authors might know, we are working on the combination of state-of-the-art precipitation products (e.g., CMORPH, PERSIANN, 3B42) and satellite soil moisture data (e.g., ESA CCI SM) for improving satellite rainfall

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estimate (over land). I believe the paper is well written and clear. The final results are very encouraging. However, in my opinion a better description of the different steps involved in the procedure should be given. I reported below my comments/suggestions that I guess could be used from the authors for improving the paper's relevance.

- 1) As mentioned above, I am very interested to understand the contribution of the different datasets to the final combined precipitation dataset. What is the contribution of the satellite products with respect to the reanalysis? Which is the contribution of satellite soil moisture data? And of air temperature? I believe that running the QRF model in different scenarios considering different subsets of data will easily allow to reply to these questions.
- 2) Actually, if I well understood, the same data period is used for the calibration and the assessment of the combined precipitation dataset. It is not fair in the comparison with the single products. Likely, a split of the data in a calibration/validation period is needed.
- 3) What is the final objective of the paper? If the authors want to provide a superior rainfall dataset, it should be tested against the SAFRAN reference dataset. What are the differences in the performance of hydrological modelling between SAFRAN and the combined dataset? This analysis might provide interesting insights.
- 4) (MINOR) Among the different satellite rainfall products, PERSIANN and CMORPH should be the versions only based on satellite data. Differently, 3B42 (V7) is corrected with rain gauge observations. Therefore, the comparison between them is not fair, and I suggest in using the real-time version of TMPA (3B42RT) for a more interesting comparison.

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